



BEST AVAILABLE COPY

HOI-14402 ST25.txt
SEQUENCE LISTING

<110> Sorensen, Anders Per
Benfield, Thomas Lars
Lundgren, Jens Dilling
Kempe, Thomas D.

<120> BINDING MEMBER TOWARDS PNEUMOCOCCUS SURFACE ADHESIN A PROTEIN
(Psaa)

<130> HOI-14402/16

<150> PCT/DK04/000492
<151> 2004-07-08

<150> US 60/486,647
<151> 2003-07-11

<150> PA 2003 01044
<151> 2003-07-08

<160> 56

<170> PatentIn version 3.3

<210> 1
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<212> DNA
<213> Homo sapiens

<220>
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<223> Sequence from human antibody generated in mouse.

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Arg Ala Ser Gln Gly Ile Ser Ser Trp Leu Ala
1 5 10

33

<210> 2
<211> 11
<212> PRT
<213> Homo sapiens

<400> 2

Arg Ala Ser Gln Gly Ile Ser Ser Trp Leu Ala
1 5 10

<210> 3
<211> 21
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(21)
<223> Sequence from human antibody generated in mouse.

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<400> 3
gtt gca tcc agt ttg caa agt
Val Ala Ser Ser Leu Gln Ser
1 5

21

<210> 4
<211> 7
<212> PRT
<213> Homo sapiens

<400> 4

Val Ala Ser Ser Leu Gln Ser
1 5

<210> 5
<211> 27
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)..(27)
<223> Sequence from human antibody generated in mouse.

<400> 5
caa cag tat aat agc tat cct ccg acg
Gln Gln Tyr Asn Ser Tyr Pro Pro Thr
1 5

27

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<211> 9
<212> PRT
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<400> 6

Gln Gln Tyr Asn Ser Tyr Pro Pro Thr
1 5

<210> 7
<211> 321
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<213> Homo sapiens

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and J-segment: JK1

<220>
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<222> (70)..(120)

<220>

<221> CDR2
<222> (148)..(168)

<220>
<221> CDR3
<222> (265)..(291)

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Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
gac aga gtc acc atc act tgt cgg gcg agt cag ggt att agc agc tgg 96
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
20 25 30
tta gcc tgg tat cag cag aaa cca gag aaa gcc cct gag tcc ctg atc 144
Leu Ala Trp Tyr Gln Gln Lys Pro Glu Lys Ala Pro Glu Ser Leu Ile
35 40 45
tat gtt gca tcc agt ttg caa agt ggg gtc cca tca agg ttc agc ggc 192
Tyr Val Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
agt gga tct ggg aca gat ttc act ctc acc atc agc agc ctg cag cct 240
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
gaa gat ttt gca act tat tac tgc caa cag tat aat agc tat cct ccg 288
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Ser Tyr Pro Pro
85 90 95
acg ttc ggc caa ggg acc aag gtg gaa atc aaa 321
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 8
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<212> PRT
<213> Homo sapiens

<400> 8
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
20 25 30
Leu Ala Trp Tyr Gln Gln Lys Pro Glu Lys Ala Pro Glu Ser Leu Ile
35 40 45
Tyr Val Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

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Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Ser Tyr Pro Pro
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 9
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ggt ttc tcc tgg agc 15
Gly Phe Ser Trp Ser
1 5

<210> 10
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<212> PRT
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<220>
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<223> Sequence from human antibody generated in mouse.

<400> 11
gaa atc gat tat aga gga agc acc aac tac aac ccg tcc ctc aag agt 48
Glu Ile Asp Tyr Arg Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

cga 51
Arg

<210> 12
<211> 17
<212> PRT
<213> Homo sapiens

<400> 12

Glu Ile Asp Tyr Arg Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

Arg

<210> 13
<211> 21
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<213> Homo sapiens

<220>
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<222> (1)..(21)
<223> Sequence from human antibody generated in mouse.

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ggg ggg ccc cgc ttt gac tac
Gly Gly Pro Arg Phe Asp Tyr
1 5

21

<210> 14
<211> 7
<212> PRT
<213> Homo sapiens

<400> 14
Gly Gly Pro Arg Phe Asp Tyr
1 5

<210> 15
<211> 345
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)..(345)
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V-segment: 4-34, D-segment: unknown, J-segment: JH4b

<220>
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<222> (91)..(102)

<220>
<221> CDR2
<222> (148)..(199)

<220>
<221> CDR3
<222> (191)..(312)

<400> 15

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cag	gtg	cga	cta	cag	cag	tgg	ggc	gca	gga	ctg	ttg	aag	cct	tcg	gag	48
Gln	Val	Arg	Leu	Gln	Gln	Trp	Gly	Ala	Gly	Leu	Leu	Lys	Pro	Ser	Glu	
1				5				10						15		
acc	ctg	tcc	ctc	acc	tgc	gct	gtc	ttt	ggg	ggg	tcc	ttc	agt	ggg	ttc	96
Thr	Leu	Ser	Leu	Thr	Cys	Ala	Val	Phe	Gly	Gly	Ser	Phe	Ser	Gly	Phe	
			20					25					30			
tcc	tgg	agc	tgg	atc	cgc	cag	acc	cca	ggg	aag	ggg	ctg	gag	tgg	atc	144
Ser	Trp	Ser	Trp	Ile	Arg	Gln	Thr	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Ile	
			35				40					45				
ggg	gaa	atc	gat	tat	aga	gga	agc	acc	aac	tac	aac	ccg	tcc	ctc	aag	192
Gly	Glu	Ile	Asp	Tyr	Arg	Gly	Ser	Thr	Asn	Tyr	Asn	Pro	Ser	Leu	Lys	
	50					55					60					
agt	cga	gtc	acc	ata	tta	aga	gac	acg	tcc	agg	agc	cag	ttc	tcc	ctg	240
Ser	Arg	Val	Thr	Ile	Leu	Arg	Asp	Thr	Ser	Arg	Ser	Gln	Phe	Ser	Leu	
65					70					75					80	
aag	ttg	agc	tcc	gtg	acc	gcc	gcg	gac	tcg	gct	gtg	ttt	tat	tgt	gcg	288
Lys	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp	Ser	Ala	Val	Phe	Tyr	Cys	Ala	
				85					90					95		
aga	ggg	ggg	ccc	cgc	ttt	gac	tac	tgg	ggc	cag	gga	acc	ctg	gtc	acc	336
Arg	Gly	Gly	Pro	Arg	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	
			100					105					110			
gtc	tcc	tca														345
Val	Ser	Ser														
		115														

<210> 16
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 <212> PRT
 <213> Homo sapiens

<400> 16

Gln	Val	Arg	Leu	Gln	Gln	Trp	Gly	Ala	Gly	Leu	Leu	Lys	Pro	Ser	Glu
1				5					10					15	
Thr	Leu	Ser	Leu	Thr	Cys	Ala	Val	Phe	Gly	Gly	Ser	Phe	Ser	Gly	Phe
			20					25					30		
Ser	Trp	Ser	Trp	Ile	Arg	Gln	Thr	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Ile
			35				40					45			
Gly	Glu	Ile	Asp	Tyr	Arg	Gly	Ser	Thr	Asn	Tyr	Asn	Pro	Ser	Leu	Lys
	50					55					60				
Ser	Arg	Val	Thr	Ile	Leu	Arg	Asp	Thr	Ser	Arg	Ser	Gln	Phe	Ser	Leu
65					70					75					80
Lys	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp	Ser	Ala	Val	Phe	Tyr	Cys	Ala
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Arg Gly Gly Pro Arg Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 17
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<213> Artificial

<220>
<223> synthetic

<220>
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<222> (1)..(33)

<220>
<221> misc_feature
<222> (33)..(33)
<223> unknown nucleotide

<400> 17
agg gcc agt cag agt gtt agc agc tac tta gcn
Arg Ala Ser Gln Ser Val Ser Ser Tyr Leu Ala
1 5 10

33

<210> 18
<211> 11
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<213> Artificial

<220>
<223> Synthetic Construct

<400> 18

Arg Ala Ser Gln Ser Val Ser Ser Tyr Leu Ala
1 5 10

<210> 19
<211> 21
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(21)
<223> Sequence from human antibody generated in mouse.

<400> 19
gat gca tcc aac agg gcc act
Asp Ala Ser Asn Arg Ala Thr
1 5

21

<210> 20
 <211> 7
 <212> PRT
 <213> Homo sapiens

<400> 20

Asp Ala Ser Asn Arg Ala Thr
 1 5

<210> 21
 <211> 27
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(27)
 <223> Sequence from human antibody generated in mouse.

<400> 21
 cag cag cgt agc aac tgg cct ctc act
 Gln Gln Arg Ser Asn Trp Pro Leu Thr
 1 5

27

<210> 22
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 22

Gln Gln Arg Ser Asn Trp Pro Leu Thr
 1 5

<210> 23
 <211> 321
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1)..(318)
 <223> Sequence from human antibody generated in mouse. V-segment: L6
 and J-segment: JK4

<220>
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 <222> (70)..(102)

<220>
 <221> misc_feature
 <222> (102)..(102)
 <223> unknown nucleotide

<220>
 <221> CDR2

<222> (148)..(168)

<220>

<221> CDR3

<222> (265)..(291)

<400> 23

gaa att gtg ttg aca cag tct cca gcc acc ctg tct ttg tct cca ggg 48
 Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

gaa aga gcc acc ctc tcc tgc agg gcc agt cag agt gtt agc agc tac 96
 Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
 20 25 30

tta gcn tgg tac caa cag aaa cct ggc cag gct ccc agg ctc ctc atc 144
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
 35 40 45

tat gat gca tcc aac agg gcc act ggc atc cca gcc agg ttc agt ggc 192
 Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
 50 55 60

agt ggg tct ggg aca gac ttc act ctc acc atc agc agc cta gag cct 240
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro
 65 70 75 80

gaa gat ttt gca gtt tat tac tgt cag cag cgt agc aac tgg cct ctc 288
 Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser Asn Trp Pro Leu
 85 90 95

act ttc ggc gga ggg acc aag gtg gag atc aaa 321
 Thr Phe Gly Gly Gly Thr Lys Val Glu Ile
 100 105

<210> 24

<211> 106

<212> PRT

<213> Homo sapiens

<400> 24

Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
 20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
 35 40 45

Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro
 65 70 75 80

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser Asn Trp Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile
100 105

<210> 25
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<213> Artificial

<220>
<223> synthetic

<220>
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Ile Phe Gly Met Ser
1 5

<210> 26
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<220>
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<400> 26
Ile Phe Gly Met Ser
1 5

<210> 27
<211> 51
<212> DNA
<213> Homo sapiens

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<222> (1)..(51)
<223> Sequence from human antibody generated in mouse.

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aac ata aag caa gat gga agt gag aaa tac tat gtg gac tct gtg aag 48
Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val Lys
1 5 10 15

ggc 51
Gly

<210> 28

<211> 17
<212> PRT
<213> Homo sapiens

<400> 28

Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val Lys
1 5 10 15

Gly

<210> 29
<211> 57
<212> DNA
<213> Homo sapiens

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<221> CDS
<222> (1)..(57)
<223> Sequence from human antibody generated in mouse.

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gat cgg ttt tac tat ggt tcg ggg agt tat tat tac tac tac aac ggt 48
Asp Arg Phe Tyr Tyr Gly Ser Gly Ser Tyr Tyr Tyr Tyr Tyr Asn Gly
1 5 10 15

atg gac gtc 57
Met Asp Val

<210> 30
<211> 19
<212> PRT
<213> Homo sapiens

<400> 30

Asp Arg Phe Tyr Tyr Gly Ser Gly Ser Tyr Tyr Tyr Tyr Tyr Asn Gly
1 5 10 15

Met Asp Val

<210> 31
<211> 384
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)..(384)
<223> Sequence from human antibody generated in mouse.
V-segment:3-7, d-segment: 3-10 and J-segment JH6b

<220>

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<221> CDR1
<222> (91)..(102)

<220>
<221> CDR2
<222> (148)..(198)

<220>
<221> CDR3
<222> (295)..(351)

<400> 31
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

tcc ctg aga ctc tcc tgt gca gcc tct gga ttc acc ttt aat atc ttt 96
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ile Phe
20 25 30

ggg atg agc tgg gtc cgc cag gct cca ggg aaa ggg ctg gag tgg gtg 144
Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

gcc aac ata aag caa gat gga agt gag aaa tac tat gtg gac tct gtg 192
Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
50 55 60

aag ggc cga ttc acc atc tcc aga gac aac gcc aag aac tca ctg tat 240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

ctg caa atg aac agc ctg aga gcc gag gac acg gct gtg tat tac tgt 288
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

gcg agg gat cgg ttt tac tat ggt tcg ggg agt tat tat tac tac tac 336
Ala Arg Asp Arg Phe Tyr Tyr Gly Ser Gly Ser Tyr Tyr Tyr Tyr Tyr
100 105 110

aac ggt atg gac gtc tgg ggc caa ggg acc acg gtc acc gtc tcc tca 384
Asn Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 32
<211> 128
<212> PRT
<213> Homo sapiens

<400> 32
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ile Phe
20 25 30

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

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Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Arg Phe Tyr Tyr Gly Ser Gly Ser Tyr Tyr Tyr Tyr Tyr
100 105 110

Asn Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 33
<211> 33
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(33)
<223> Sequence from human antibody generated in mouse.

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Arg Ala Ser Gln Ser Val Ser Ser Tyr Leu Ala
1 5 10

<210> 34
<211> 11
<212> PRT
<213> Homo sapiens

<400> 34
Arg Ala Ser Gln Ser Val Ser Ser Tyr Leu Ala
1 5 10

<210> 35
<211> 21
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(21)
<223> Sequence from human antibody generated in mouse.

<400> 35
gat gca tcc aac agg gcc act 21
Asp Ala Ser Asn Arg Ala Thr

1

5

<210> 36
 <211> 7
 <212> PRT
 <213> Homo sapiens

<400> 36

Asp Ala Ser Asn Arg Ala Thr
 1 5

<210> 37
 <211> 30
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(30)
 <223> Sequence from human antibody generated in mouse.

<400> 37
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 Gln Gln Arg Ser Asn Trp Pro Pro Phe Thr
 1 5 10

30

<210> 38
 <211> 10
 <212> PRT
 <213> Homo sapiens

<400> 38

Gln Gln Arg Ser Asn Trp Pro Pro Phe Thr
 1 5 10

<210> 39
 <211> 324
 <212> DNA
 <213> Homo sapiens

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 <223> Sequence from human antibody generated in mouse.
 V-segment: L6 and J-segment: JK3

<220>
 <221> CDR1
 <222> (70)..(102)

<220>
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 <222> (148)..(168)

<220>

<221> CDR3

<222> (265)..(294)

<400> 39

gaa att gtg ttg aca cag tct cca gcc acc ctg tct ttg tct cca ggg 48
 Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

gaa aga gcc acc ctc tcc tgc agg gcc agt cag agt gtt agc agc tac 96
 Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
 20 25 30

tta gcc tgg tac caa cag aaa cct ggc cag gct ccc agg ctc ctc atc 144
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
 35 40 45

tat gat gca tcc aac agg gcc act ggc atc cca gcc agg ttc agt ggc 192
 Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
 50 55 60

agt ggg tct ggg aca gac ttc act ctc acc atc agc agc cta gag cct 240
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro
 65 70 75 80

gaa gat ttt gca gtt tat tac tgt cag cag cgt agc aac tgg cct cca 288
 Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser Asn Trp Pro Pro
 85 90 95

ttc act ttc ggc cct ggg acc aaa gtg gat atc aaa 324
 Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

<210> 40

<211> 108

<212> PRT

<213> Homo sapiens

<400> 40

Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
 20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
 35 40 45

Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro
 65 70 75 80

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser Asn Trp Pro Pro
 85 90 95

Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 41
<211> 15
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(15)
<223> Sequence from human antibody generated in mouse.

<400> 41
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1 5

15

<210> 42
<211> 5
<212> PRT
<213> Homo sapiens

<400> 42
Ser Phe Trp Met Ser
1 5

<210> 43
<211> 30
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(30)
<223> Sequence from human antibody generated in mouse.

<400> 43
aac ata aag caa gat gga agt gag aaa ttc
Asn Ile Lys Gln Asp Gly Ser Glu Lys Phe
1 5 10

30

<210> 44
<211> 10
<212> PRT
<213> Homo sapiens

<400> 44
Asn Ile Lys Gln Asp Gly Ser Glu Lys Phe
1 5 10

<210> 45
<211> 54

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<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(54)
<223> Sequence from human antibody generated in mouse.

<400> 45
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Asp Arg Ile Thr Met Val Arg Pro Tyr Tyr Tyr Phe Tyr Asn Gly Leu
1 5 10 15

gac gtc 54
Asp Val

<210> 46
<211> 18
<212> PRT
<213> Homo sapiens

<400> 46
Asp Arg Ile Thr Met Val Arg Pro Tyr Tyr Tyr Phe Tyr Asn Gly Leu
1 5 10 15

Asp Val

<210> 47
<211> 381
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(381)
<223> Sequence from human antibody generated in mouse.
V-segment: 3-7, D-segment: 3-10 and J-segment: JH6b

<220>
<221> CDR1
<222> (91)..(102)

<220>
<221> CDR2
<222> (148)..(177)

<220>
<221> CDR3
<222> (295)..(348)

<400> 47
gag gta cag ctg gtg gag tct ggg gga ggc ttg gtc cag ccg ggg ggg 48
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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tcc ctg aga ctc tcc tgt gca gct tct gga ttc acc ttt agt agc ttt 96
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
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Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

gcc aac ata aag caa gat gga agt gag aaa ttc tat gtg gac tct gtg 192
Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Phe Tyr Val Asp Ser Val
50 55 60

aag ggc cga ttc acc atc tcc aga gac aac gcc aag aac tca ctg tat 240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

ctg caa atg aac agc ctg aga gcc gag gac acg gct gtg tat tac tgt 288
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

gcg agg gat cgt att aca atg gtt cgg ccc tat tac tac ttc tac aac 336
Ala Arg Asp Arg Ile Thr Met Val Arg Pro Tyr Tyr Tyr Phe Tyr Asn
100 105 110

ggc ctg gac gtc tgg ggc caa ggg acc acg gtc acc gtc tcc tca 381
Gly Leu Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 48
<211> 127
<212> PRT
<213> Homo sapiens

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
20 25 30

Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Phe Tyr Val Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Arg Ile Thr Met Val Arg Pro Tyr Tyr Tyr Phe Tyr Asn
100 105 110

HOI-14402 ST25.txt

Gly Leu Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 49
<211> 930
<212> DNA
<213> Streptococcus pneumoniae

<220>
<221> CDS
<222> (1)..(930)
<223> Sequence of Streptococcus pneumoniae surface adhesin A (PsaA)- A Variant

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1 5 10 15
ctt gta gca tgt gct agc gga aaa aaa gat aca act tct ggt caa aaa 96
Leu Val Ala Cys Ala Ser Gly Lys Lys Asp Thr Thr Ser Gly Gln Lys
20 25 30
cta aaa gtt gtt gct aca aac tca atc atc gct gat att act aaa aat 144
Leu Lys Val Val Ala Thr Asn Ser Ile Ile Ala Asp Ile Thr Lys Asn
35 40 45
att gct ggt gac aaa att gac ctt cat agt atc gtt ccg att ggg caa 192
Ile Ala Gly Asp Lys Ile Asp Leu His Ser Ile Val Pro Ile Gly Gln
50 55 60
gac cca cac gaa tac gaa cca ctt cct gaa gac gtt aag aaa act tct 240
Asp Pro His Glu Tyr Glu Pro Leu Pro Glu Asp Val Lys Lys Thr Ser
65 70 75 80
gag gct gat ttg att ttc tat aac ggt atc aac ctt gaa aca ggt ggc 288
Glu Ala Asp Leu Ile Phe Tyr Asn Gly Ile Asn Leu Glu Thr Gly Gly
85 90 95
aat gct tgg ttt aca aaa ttg gta gaa aat gcc aag aaa act gaa aac 336
Asn Ala Trp Phe Thr Lys Leu Val Glu Asn Ala Lys Lys Thr Glu Asn
100 105 110
aaa gac tac ttc gca gtc agc gac ggc gtt gat gtt atc tac ctt gaa 384
Lys Asp Tyr Phe Ala Val Ser Asp Gly Val Asp Val Ile Tyr Leu Glu
115 120 125
ggt caa aat gaa aaa gga aaa gaa gac cca cac gct tgg ctt aac ctt 432
Gly Gln Asn Glu Lys Gly Lys Glu Asp Pro His Ala Trp Leu Asn Leu
130 135 140
gaa aac ggt att att ttt gct aaa aat atc gcc aaa caa ttg agc gcc 480
Glu Asn Gly Ile Ile Phe Ala Lys Asn Ile Ala Lys Gln Leu Ser Ala
145 150 155 160
aaa gac cct aac aat aaa gaa ttc tat gaa aaa aat ctc aaa gaa tat 528
Lys Asp Pro Asn Asn Lys Glu Phe Tyr Glu Lys Asn Leu Lys Glu Tyr
165 170 175
act gat aag tta gac aaa ctt gat aaa gaa agt aag gat aaa ttt aat 576

Glu Ala Asp Leu Ile Phe Tyr Asn Gly Ile Asn Leu Glu Thr Gly Gly
85 90 95

Asn Ala Trp Phe Thr Lys Leu Val Glu Asn Ala Lys Lys Thr Glu Asn
100 105 110

Lys Asp Tyr Phe Ala Val Ser Asp Gly Val Asp Val Ile Tyr Leu Glu
115 120 125

Gly Gln Asn Glu Lys Gly Lys Glu Asp Pro His Ala Trp Leu Asn Leu
130 135 140

Glu Asn Gly Ile Ile Phe Ala Lys Asn Ile Ala Lys Gln Leu Ser Ala
145 150 155 160

Lys Asp Pro Asn Asn Lys Glu Phe Tyr Glu Lys Asn Leu Lys Glu Tyr
165 170 175

Thr Asp Lys Leu Asp Lys Leu Asp Lys Glu Ser Lys Asp Lys Phe Asn
180 185 190

Lys Ile Pro Ala Glu Lys Lys Leu Ile Val Thr Ser Glu Gly Ala Phe
195 200 205

Lys Tyr Phe Ser Lys Ala Tyr Gly Val Pro Ser Ala Tyr Ile Trp Glu
210 215 220

Ile Asn Thr Glu Glu Glu Gly Thr Pro Glu Gln Ile Lys Thr Leu Val
225 230 235 240

Glu Lys Leu Arg Gln Thr Lys Val Pro Ser Leu Phe Val Glu Ser Ser
245 250 255

Val Asp Asp Arg Pro Met Lys Thr Val Ser Gln Asp Thr Asn Ile Pro
260 265 270

Ile Tyr Ala Gln Ile Phe Thr Asp Ser Ile Ala Glu Gln Gly Lys Glu
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Glu Gly Leu Ala Lys
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<213> Streptococcus pneumoniae

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<211> 25

<212> PRT

<213> Streptococcus pneumoniae

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<210> 53

<211> 25

<212> PRT

<213> Streptococcus pneumoniae

<400> 53

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His Ser Ile Val Pro Ile Gly Gln Asp
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<210> 54

<211> 65

<212> PRT

<213> Streptococcus pneumoniae

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 20 25 30

Leu Lys Val Val Ala Thr Asn Ser Ile Ile Ala Asp Ile Thr Lys Asn
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Ile Ala Gly Asp Lys Ile Asp Leu His Ser Ile Val Pro Ile Gly Gln
 50 55 60

Asp
65

<210> 55
<211> 960
<212> DNA
<213> Streptococcus pneumoniae

<220>
<221> CDS
<222> (1)..(930)
<223> equence of Streptococcus pneumoniae surface adhesin A (PsaA)

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ctt gta gca tgt gct agc gga aaa aaa gat aca act tct ggt caa aaa      96
Leu Val Ala Cys Ala Ser Gly Lys Lys Asp Thr Thr Ser Gly Gln Lys
                               20                               25                               30

cta aaa gtt gtt gct aca aac tca atc atc gct gat att act aaa aat      144
Leu Lys Val Val Ala Thr Asn Ser Ile Ile Ala Asp Ile Thr Lys Asn
                               35                               40                               45

att gct ggt gac aaa att gac ctt cat agt atc gtt ccg att ggg caa      192
Ile Ala Gly Asp Lys Ile Asp Leu His Ser Ile Val Pro Ile Gly Gln
                               50                               55                               60

gac cca cac gaa tac gaa cca ctt cct gaa gac gtt aag aaa act tct      240
Asp Pro His Glu Tyr Glu Pro Leu Pro Glu Asp Val Lys Lys Thr Ser
65                               70                               75                               80

gag gct gat ttg att ttc tat aac ggt atc aac ctt gaa aca ggt ggc      288
Glu Ala Asp Leu Ile Phe Tyr Asn Gly Ile Asn Leu Glu Thr Gly Gly
                               85                               90                               95

aat gct tgg ttt aca aaa tta gta gaa aat gcc aag aaa act gaa aac      336
Asn Ala Trp Phe Thr Lys Leu Val Glu Asn Ala Lys Lys Thr Glu Asn
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Lys Asp Tyr Phe Ala Val Ser Asp Gly Val Asp Val Ile Tyr Leu Glu
                               115                              120                              125

ggt caa aat gaa aaa gga aaa gaa gac cca cac gct tgg ctt aac ctt      432
Gly Gln Asn Glu Lys Gly Lys Glu Asp Pro His Ala Trp Leu Asn Leu
                               130                              135                              140

gaa aac ggt att att ttt gct aaa aat atc gcc aaa caa ttg agc gcc      480
Glu Asn Gly Ile Ile Phe Ala Lys Asn Ile Ala Lys Gln Leu Ser Ala
145                              150                              155                              160

aaa gac cct aac aat aaa gaa ttc tat gaa aaa aat ctc aaa gaa tat      528
Lys Asp Pro Asn Asn Lys Glu Phe Tyr Glu Lys Asn Leu Lys Glu Tyr
                               165                              170                              175

act gat aag tta gac aaa ctt gat aaa gaa agt aag gat aaa ttt aat      576

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HOI-14402 ST25.txt

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Lys	Ile	Pro	Ala	Glu	Lys	Lys	Leu	Ile	Val	Thr	Ser	Glu	Gly	Ala	Phe		
		195					200					205					
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Lys	Tyr	Phe	Ser	Lys	Ala	Tyr	Gly	Val	Pro	Ser	Ala	Tyr	Ile	Trp	Glu		
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				245					250					255			
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Val	Asp	Asp	Arg	Pro	Met	Lys	Thr	Val	Ser	Gln	Asp	Thr	Asn	Ile	Pro		
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Ile	Tyr	Ala	Gln	Ile	Phe	Thr	Asp	Ser	Ile	Ala	Glu	Gln	Gly	Lys	Glu		
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ggc	gac	agc	tac	tac	agc	atg	atg	aaa	tac	aac	ctt	gac	aag	att	gct	912	
Gly	Asp	Ser	Tyr	Tyr	Ser	Met	Met	Lys	Tyr	Asn	Leu	Asp	Lys	Ile	Ala		
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 <213> Streptococcus pneumoniae
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Leu	Lys	Val	Val	Ala	Thr	Asn	Ser	Ile	Ile	Ala	Asp	Ile	Thr	Lys	Asn
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Glu Ala Asp Leu Ile Phe Tyr Asn Gly Ile Asn Leu Glu Thr Gly Gly
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Asn Ala Trp Phe Thr Lys Leu Val Glu Asn Ala Lys Lys Thr Glu Asn
100 105 110

Lys Asp Tyr Phe Ala Val Ser Asp Gly Val Asp Val Ile Tyr Leu Glu
115 120 125

Gly Gln Asn Glu Lys Gly Lys Glu Asp Pro His Ala Trp Leu Asn Leu
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Glu Asn Gly Ile Ile Phe Ala Lys Asn Ile Ala Lys Gln Leu Ser Ala
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Lys Asp Pro Asn Asn Lys Glu Phe Tyr Glu Lys Asn Leu Lys Glu Tyr
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Thr Asp Lys Leu Asp Lys Leu Asp Lys Glu Ser Lys Asp Lys Phe Asn
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Lys Tyr Phe Ser Lys Ala Tyr Gly Val Pro Ser Ala Tyr Ile Trp Glu
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Ile Asn Thr Glu Glu Glu Gly Thr Pro Glu Gln Ile Lys Thr Leu Val
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Glu Lys Leu Arg Gln Thr Lys Val Pro Ser Leu Phe Val Glu Ser Ser
245 250 255

Val Asp Asp Arg Pro Met Lys Thr Val Ser Gln Asp Thr Asn Ile Pro
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Ile Tyr Ala Gln Ile Phe Thr Asp Ser Ile Ala Glu Gln Gly Lys Glu
275 280 285

Gly Asp Ser Tyr Tyr Ser Met Met Lys Tyr Asn Leu Asp Lys Ile Ala
290 295 300

Gly Gly Leu Ala Lys
305